

REMARKS

Claims 1-13, 22, 23 and 28-40 are pending in the present application. Claims 14-21 and 24-27 were previously canceled. No new matter has been added. Applicants respectfully request reconsideration of the claims in view of the following remarks.

Claims 1, 4-6, 22, 23, 28, 29 and 40 have been rejected under 35 U.S.C. § 103(b) as being anticipated by Chen (U.S. Patent Publication No. 2002/0170880, hereinafter "Chen"), in view of Sangu, et al. (U.S. Patent Publication No. 2001/0026638, hereinafter "Sangu"). Claims 2, 3, 7-13 and 30-39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen, in view of Sangu, as applied to claims 1, 4-6, 22, 23, 28, 29 and 40 above, and further in view of Farrar et al. (U.S. Patent Publication No. 2002/0076896, hereinafter "Farrar"). Applicants respectfully traverse these rejections.

Claim 1, as previously presented, recites "a positioning system comprising a plurality of infrared light sources and a plurality of infrared cameras, wherein each mutually assigned pair of alignment marks is assigned an infrared light source and a corresponding infrared camera." Chen and Sangu do not teach or suggest these limitations. According to the Office Action, "Chen does not clearly teach the plurality of infrared light sources and a plurality of infrared cameras. Sangu et al. teaches the plurality of X-ray sources or infrared light sources 1 and a plurality of CCD cameras or infrared cameras 2." To the contrary, Sangu teaches an alignment system where "the alignment mark on the core board is invisible because the layer is covered by copper foil before the pattern is formed." Sangu, paragraph [0005]. Sangu therefore teaches using an X-ray source to penetrate the circuit boards and using a fluorescent screen to convert X-rays to a visible or infrared light *after* the X-rays pass through the surfaces to be

aligned. Sangu, paragraphs [0008] to [0010]. Clearly the fluorescent screen is functioning as an imaging system in Sangu. Nowhere does Sangu teach or suggest that an infrared light source is used. Even if one were to assume that the infrared light emanating from the fluorescent screen qualifies as an infrared light source according claim 1, the claim's further limitation of a plurality of infrared cameras would then not be met for at least two reasons. One reason is simply because Sangu does not disclose an infrared imaging system; fluorescent screens typically do not fluoresce in the presence of infrared light. The second reason is that defining the infrared light emanating from reflected X-rays hitting the fluorescent screen would constitute non-causal and recursive definition. Incident energy hits a object before it is reflected and received; that which receives energy is, by definition, not the source of the energy which it receives.

In the Response to Arguments section, the Final Office Action argues that “[t]he conventional X-ray does not penetrated the layer covered by the copper foil.” To the contrary, Sangu specifically teaches that “the mark on the board can be imaged on the projection screen by Xray radiation even if it is covered by copper foil or the like and invisible.” Sangu, paragraph [0009]; Emphasis added. Not only does Sangu not teach using a plurality of infrared light sources and a plurality of infrared cameras, but Sangu teaches away from using a light source of any kind. Applicants, therefore, respectfully submit that because Chen does not teach using a plurality of infrared light sources and a plurality of infrared cameras, and because Sangu teaches away from these limitations, claim 1 is patentable over the prior art of record.

Claims 2-13 and 32-39 depend from claim 1 directly or indirectly and add further limitations. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well as for adding new limitations.


Claim 22, as previously presented, recites that “the infrared position system includes a plurality of infrared light sources and a plurality of infrared cameras, wherein each alignment mark on the stamp is aligned with a corresponding alignment mark on the semiconductor wafer using one of the infrared light sources and one of the infrared cameras.” As discussed with respect to claim 1, hereinabove, Chen and Sangu do not teach or suggest “a plurality of infrared light sources and a plurality of infrared cameras.” Applicants, therefore, respectfully submit that claim 22 is allowable over the prior art of record.

Claims 23, 28-31, and 40 depend from claim 22 directly or indirectly and add further limitations. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well as for adding new limitations.

In view of the above, Applicants respectfully submit that this response complies with 37 C.F.R. § 1.116. Applicants further submit that the claims are in condition for allowance. No new matter has been added by this amendment. If the Examiner should have any questions, please contact Applicants' attorney at the number listed below. No fee is believed due in connection with this filing. However, in the event that there are any fees due, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065.

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Date

Respectfully submitted,



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